PROPOSAL EVALUATION

Proposition 84 Integrated Regional Water Management (IRWM) Grant Program

Implementation Grant, Round 1, FY 2010-2011

Applicant	Santa Ana Watershed Project Authority	**Amount Requested**	$12,666,666
Proposal Title	Santa Ana One Water One Watershed IRWM Prop 84, Round 1 Implementation Proposal	**Total Proposal Cost**	$268,827,792

PROPOSAL SUMMARY

Thirteen projects are included in the proposal (referenced {a} through {m} in the application): (1) Groundwater Replenishment System - Flow Equalization, (2) Sludge Dewatering, Odor Control, and Primary Sludge Thickening, (3) East Garden Grove Wintersburg Channel Urban Runoff Diversion, (4) Romoland Line A Flood System, (5) Santa Ana Watershed Vireo Monitoring, (6) Mill Creek Wetlands, (7) Cactus Basin, (8) Inland Empire Brine Line Rehabilitation and Enhancement, (9) Arlington Desalter Interconnection Project, (10) Perris II Desalination Facility, (11) Perchlorate Wellhead Treatment System Pipelines, (12) Chino Creek Wellfield Development, and (13) Impaired Groundwater Recovery.

PROPOSAL SCORE

Criteria	Score/ Points Possible	Criteria	Score/ Points Possible
Work Plan	**9/15**	Economic Analysis – Water Supply Costs and Benefits	**9/15**
Budget	**2/5**	Water Quality and Other Expected Benefits	**6/15**
Schedule	**5/5**	Economic Analysis – Flood Damage Reduction	**9/15**
Monitoring, Assessment, and Performance Measures	**4/5**	Program Preferences	**8/10**
		Total Score (max. possible = 85)	**52**

EVALUATION SUMMARY

The following is a review summary of the proposal.

Work Plan

The proposal does not fully address the criterion and has insufficient supporting documentation. Proposal introduction includes the goals and objectives of the proposal and the relationship to the adopted IRWM Plan. In addition, the Proposal appears to be consistent with the region's Basin Plan. The applicant does a good job of introducing the project and the proposed scope and each project's task deliverables included quarterly and final reports. Each project's task includes a list of applicable permits and their status, including California Environmental Quality Act (CEQA) compliance. The Proposal includes a discussion of the synergies and linkages among the projects but it was basic and lacked detail. Projects 1, 2, 4, 5, and 11

lacked plan reports, design drawings or specification to support the descriptions of the projects. Most of the project maps do not contain a legend, which make it difficult to identify the necessary information of the project site (with the exception of Project 2, 6, and 13 whose maps present adequate detail). Some of the projects' tasks lack detail (for example, Projects 6 and 11 do not clearly identify who would submit reports; Projects 4, 5, and 6 lack detail; and Projects 7, 8, and 10 are vague). Also, the eligibility of Project 5 could not be fully validated as it was not clear whether the project will achieve multiple benefits or not.

Budget

The Budgets for some of the projects in the Proposal have partially detailed cost information, however, not all costs seem reasonable and supporting documentation is lacking. In addition, the level of budget detail provided for the projects is inconsistent. There is a lack of consistency between budget items, work plan tasks, and the schedules. The proposal lacks detailed costs information and supporting documentation explanation for how project costs are estimated. Budgets for most of the projects lack detail for one or more of the tasks (with the exception of Projects 5 and 12). The Budget of many individual projects reference detailed budget information that was not provided [see Attachment 4, Projects 4 (p 38), 8 (p 63), 9 (p 66), 10 (p 69), and 11 (p 72-74)].

Schedule

The schedule is consistent and reasonable and demonstrates a readiness to begin construction or implementation for more than one project of the Proposal no later than six months (December 1, 2011) after the anticipated award date (June, 1, 2011).

Monitoring, Assessment, and Performance Measures

The criterion is fully addressed, but is not supported by a thorough or sufficient rationale for all of the proposed projects. Most of projects demonstrate well-defined monitoring assessment and performance measures; however, performance measures for several of the projects are missing specifics. Targets should be project specific and quantified to the extent possible.

Economic Analysis – Water Supply Costs and Benefits

Above average levels of water supply benefits relative to costs might be realized through this proposal; however, the quality of the analysis is moderate and supporting documentation is partially unsubstantiated. The Santa Ana Watershed IRWM includes thirteen projects. Monetized water supply benefits are claimed by all Projects except 6 and 7. Total claimed benefits are $1,344.74 million (M). Most of these benefits are claimed by Project 1 ($581.83 M), Project 2 ($453.61 M), and Project 8 ($188.6 M).

Project 1 claims 12,000 acre feet per year (AFY) of supply benefit from installation of flow equalization tanks. Project 2 claims 31,000 AFY of benefit from improvements at Plant No. 1, P1-101 project. The accompanying Engineer' report suggests that both improvements would be required to obtain the 31,000 AFY of benefit.[1] Page 1, the report "evaluates a 30 million gallons per day (mgd) expansion which could result in approximately 31,000 additional AFY." Page 6, "flow equalization of secondary effluent would be provided by the construction of two 7.5 million gallon storage tanks" Project 1 appears to be part of Project 2. Therefore, the 12,000 AFY benefit of Project 1 should not be claimed in addition to the Project 2 claim.

[1] Patel, Mehul. 2010. Engineers Report. Initial Expansion of the Groundwater Replenishment System. OCWD. August.

For Project 2(attachment 7), claims an avoided project cost amounting to $450 M net present value (NPV). The avoided project is a Santa Ana Regional Interceptor diversion through Plant No. 2 and pumping from Plant No. 2 to the Groundwater Replenishment System (GWRS). There is no discussion to justify this as an alternative cost. Apparently, this project could be built to provide the 31,000 AFY for the GWRS instead. If this is not an option actually being considered, the value of the 31,000 AFY should probably be based on the cost of water it replaces. All incremental costs of treating, storing, and removing (pumping) the water should be included.

In addition, Project 2 (Attachment 7), also presents the cost of Metropolitan Water District (MWD) treated tier 1 water, minus the cost of recharged water, as a benefit amounting to $139.69 M. The project cost includes $145 per AF for operations. Attachment 7 indicates that the net value of recycled water should be $340 ($920 minus $580) in 2015; Table 12 shows this value as $240, not $340. The analysis is correct to subtract the incremental cost of the water to be treated from its value. However, there is no documentation to support the $580. Also, there is no mention of costs required to pump recharged water to the surface. This cost should be included to make it comparable to MWD water. The difference between $240 and $340 could account for the cost of pumping water. The benefit claimed by the proposal does not include this approach, however it seems more reasonable than the avoided project cost approach.

From Attachment 7, the Talbert Injection Barrier can handle 42 mgd. When recycled water production exceeds this capacity, the water can be routed to the Kraemer and Miller basins. However, in high stormwater flow situations “the GWRS’s production can be ramped down so that the basins can capture the additional stormflows.” This discussion implies that recharge of stormwater might replace the recycled water. This could limit recharge potential. Also, the potential for existing well capacity to limit the amount of water that can be recovered is unknown. Additional documentation would have been required to substantiate a higher score.

Project 8, the Inland Empire Brine Line Rehabilitation and Enhancement, provides additional capacity in the Santa Ana Regional Interceptor Line to enable Eastern Municipal Water District (EMWD) and Western Municipal Water District (WMWD) to discharge 4 mgd of brine waste from their desalter projects, enabling the production of 23,295 AFY of potable groundwater. Benefits are based on the cost of imported water, less the cost of desalting water which was assumed to be $563 per AF. Note that the construction of this project apparently will not by itself provide the amount of water claimed, because the water must also be desalted. “Without the project, future desalting projects may not occur. . . This additional capacity will facilitate groundwater treatment projects.” The water supply benefits from this project are speculative because some of the infrastructure needed to obtain the benefits is not in place. At least, benefits will be delayed until the addition desalination capacity is built. Also, some of the benefits should be apportioned to the additional capital cost required to achieve them. The present value of desalting costs is probably about $200 M ($563 times 23,295 times 15.6) and the present value of project costs is about $12 M, so only 6 percent of the net benefits or $11 M might be attributed to this project alone.

Project 5 claims $14.821 M of water supply benefit for reduced consumptive use by Arundo. From the text, it appears that the savings claimed for 4,000 acres is based on acreage that already had all Arundo removed. For this reason, benefits claimed by Arundo removal do not appear valid. The water supply benefit should be limited to incremental water losses if maintenance is stopped, plus savings from acreage added to the project.

Economic Analysis – Water Quality and Other Expected Benefits

Only average levels of water quality benefits relative to costs might be realized through this proposal; however, the quality of the analysis is moderate and supporting documentation is partially unsubstantiated. Monetized water quality and other benefits are claimed by all projects except 4, 5, 9, and 13. Total claimed benefits are $774.73 M. Most of these benefits are claimed by Project 8 ($420.93 M), Project 2 ($136.56 M), Project 7 ($71.145 M) and Project 1 ($52.074 M).

Project 2 benefits are: 1) energy savings from reduced water imports; 2) greenhouse gas reductions, waste transport; 3) greenhouse gas reductions, reduced imports; and 4) lower total dissolved solid levels. Energy savings from reduced imports is a double-count with water supply cost savings, because most of the water supply variable cost is energy. The greenhouse gas reductions from reduced imports do not account for the energy required to reclaim, spread and pump the reclaimed water. Therefore, only 2) and 4) seem to be appropriate. The greenhouse gas reduction for waste transport appears to be calculated correctly, but it accounts for a small share of the benefit.

For several Projects, the source of the benefits estimates is not clear. For Project 7, the claimed benefit is based on 12,000 AFY at $400 per AFY. This appears to be a water supply benefit, not quality, and it is not well-documented. Claimed Project 6 benefits, based on an avoided similar project, are $26.424 M. Some of the potential benefits; the source or meaning of the $200 per AFY benefit claimed in Table 16 for example, are not clear. Claimed Project 10 benefits are $21 M based on the avoided cost of salt removal by other means. Since this project is a well, the cost of removing the salts should also be included in the project cost, or “the avoided cost of salt removal by other means” should be a net benefit.

Claimed Project 11 benefits, based on the costs of removing salts, are $25.1 M. In the water supply analysis, benefits are based on the avoided cost of State Water Project (SWP) supplies. This analysis changes the without-project condition to claim both benefits; either the water supply benefit (without project condition is SWP supply), or the water quality benefit (without project condition is groundwater treatment) should be claimed. Claimed Project 12 benefits are $20.12 M. Similar to Project 11. Table 12 claimed 2,500 AF of supply replacement. Table 16 claims reduced costs for salt removal from 2,900 AF.

Economic Analysis – Flood Damage Reduction

Above average levels of flood damage reduction benefits relative to costs might be realized through this proposal; however, the quality of the analysis is moderate and supporting documentation is partially unsubstantiated. Monetized flood damage reduction benefits are claimed by two projects, 4 and 7. Total claimed benefits are $394.84 M. Most of these benefits are claimed by Project 4 ($380.59 M). Flood flows and associated damages, primarily in the City of Menifee are substantially reduced in the 2, 5, 10, and 100 year events. Table 18 incorrectly calculates expected annual damages (EAD) based on the change in damages in the interval X the event probability. From Flood Rapid Analysis Model (FRAM), this calculation should be the sum of the average of damage in each interval X the interval probability. The proposal obtains an average annual damage of $29.772 M; the corrected annual damage is $38.612 M or $493 M in NPV terms.

Documentation for some claimed benefits is not adequately supported (i.e., source: FEMA). Still, the analysis suggests that this is an economical project.

For Project 7, it appears that the EAD was not calculated correctly and may understate the value of the project. Corrected benefits are $966,000 or $15 million NPV.

Program Preferences

The Proposal demonstrates with a significant degree of certainty that the Program Preference claimed can be achieved, and thoroughly documents the breadth and magnitude of the Program Preference to be implemented. The Proposal includes thirteen projects that collectively will implement eleven Program Preferences including: Include regional projects or programs, Effectively integrate water management programs and projects within hydrologic region, Contribute to attainment of one or more of the objectives of the CALFED Bay-Delta Program, Effectively integrate water management with land use planning, drought preparedness, Use and reuse water more efficiently, Climate change response actions, Expand environmental stewardship, Practice integrated flood management, Protect surface water and groundwater quality, and Ensure equitable distribution of benefits. The Proposal includes a Project (Perris II Desalter) that, in part, would provide water supply benefits to Disadvantaged Communities (DAC) in the Region. Majority of this Project's benefits would occur to non DAC areas. Therefore, a Program Preference point for addressing the critical water supply needs of a DAC is not awarded.